

REMARKS

Applicants have carefully studied the outstanding Official Action. The present remarks are intended to be fully responsive to all points of rejection. Favorable reconsideration and allowance of the present application are hereby respectfully requested.

The drawings are objected to because the Examiner indicates that the amendment of 3 February 2005 described corrections to the drawings, but the office received no actual corrected drawings with the amendment.

Applicants sincerely regret the omission of the corrected drawings from the communication filed on 3 February 2005, and enclose the corrected drawings with the present response.

Claims 1 - 17 were examined and are now pending in the application.

Claims 1 - 17 stand rejected under 35 USC 103(a) as being unpatentable over US Patent 6,288,808 to Lee et al (Lee) in view of an article titled "New Multiprotocol WDM/CDMA-Based Optical Switch Architecture" of Benhaddou et al; Simulation Symposium 2001. Proceedings. 34th Annual, 22 - 26 April 2001, Pages 285 - 291 (Benhaddou).

Lee describes an optical asynchronous transfer mode ATM switch for recovering the limitation of processing capacity and performing large capacity of switching.

Benhaddou describes a non-blocking multiprotocol switch architecture based on WDM and CDMA techniques.

Claim 1 refers to switching to a destination route upstream optical signal samples that are obtained from a first source by a spread spectrum technique and upstream optical signal samples that are obtained from additional NCC sources, and recites, inter alia, a combination comprising optically converting the upstream optical signal samples that are obtained from the first source and the upstream optical signal samples that are obtained from the additional NCC sources into a broadband combined series of upstream optical signal samples.

It is respectfully submitted that Lee and Benhaddou do not show or suggest the combination recited in claim 1. Specifically, neither Lee nor Benhaddou refer to upstream optical signal samples that are obtained from one or more sources by a spread spectrum technique. With respect to Lee, the Examiner acknowledges, in lines 9 - 14 on page 4 of the outstanding Official Action, that Lee does not disclose that the optical signal samples obtained from the first source are obtained by a spread spectrum technique, or that the upstream optical signal samples that are separately obtained from NS sources are obtained by said spread spectrum technique.

With respect to Benhaddou, Benhaddou recites, in the second paragraph in Section 3 titled "Proposed Architecture" on page 286, the following with respect to the Optical Demultiplexer (OD):

"This module receives a WDM input from the incoming linkinput link and splits the optical signal into n components based on the wavelength."

Such a recitation means that Benhaddou only refers to an input which includes WDM signals. Fig. 1a of Benhaddou also shows

that Benhaddou only refers to an input which includes WDM signals. It is noted that CDMA signals in Benhaddou exist only in the CDMA switches. Thus, Benhaddou does not refer to upstream optical signal samples that are obtained from one or more sources by a spread spectrum technique.

Since neither Lee nor Benhaddou refer to upstream optical signal samples that are obtained from one or more sources by a spread spectrum technique, it is respectfully submitted that combining Lee with Benhaddou necessarily cannot show or suggest any operation which is performed on upstream optical signal samples that are obtained from one or more sources by a spread spectrum technique, and necessarily cannot show or suggest the particular combination recited in claim 1 which comprises optically converting the upstream optical signal samples that are obtained from the first source and the upstream optical signal samples that are obtained from the additional NCC sources into a broadband combined series of upstream optical signal samples.

Additionally, it is respectfully submitted that it is not clear whether and how a combination of Lee with Benhaddou would at all be operable. Specifically, it is not clear where in the system of Lee the CDMA switches of Benhaddou can be integrated and how the CDMA switches of Benhaddou can operate in the system of Lee. For example, it is not clear whether and how the CDMA switches of Benhaddou can operate with any of the WDM-to-TDM Conversion Modules and the TDM & WDM Hybrid Switching Modules of Lee. It thus appears that a combination of Lee with Benhaddou is inoperable.

In this respect it is also respectfully submitted that if the combination of Lee with Benhaddou is inoperable,

then there could be no motivation to combine Lee with Benhaddou and a person skilled in the art is not expected to combine Lee with Benhaddou.

It is further respectfully submitted that neither Lee nor Benhaddou suggest any combination of Lee with Benhaddou.

Combining Lee with Benhaddou is therefore inappropriate for rejecting claim 1.

Thus, Applicants respectfully point out that the Examiner has failed to make a *prima facie* case for the unpatentability of claim 1.

Claim 1 is therefore deemed allowable.

Claim 2 depends from claim 1 and recites additional patentable subject matter.

Also as regards claim 2, it is respectfully submitted that Lee and Benhaddou do not show or suggest at least the features of claim 2 which relate to dropping the upstream optical signal samples obtained from the first source, and to converting the dropped upstream optical signal samples obtained from the first source into a first series of upstream optical signal samples centered around a channel wavelength λ_D .

Claim 2 is therefore deemed allowable.

Claim 3 depends indirectly from claim 1 and recites additional patentable subject matter.

Claim 3 is therefore deemed allowable.

Claim 4 depends from claim 1 and recites additional patentable subject matter.

Also as regards claim 4, it is respectfully submitted that Lee and Benhaddou do not show or suggest at least the features of claim 4 which relate to dropping the upstream optical signal samples obtained from the first source, and to converting the dropped upstream optical signal samples obtained from the first source into a first broadband series of upstream optical signal samples.

Claim 4 is therefore deemed allowable.

Claim 5 depends from claim 1 and recites additional patentable subject matter.

Claim 5 is therefore deemed allowable.

Claim 6 refers to switching to nn routes a broadband series of downstream optical signal samples obtained by utilizing a spread spectrum technique, and recites, inter alia, a combination comprising optically converting the broadband series of downstream optical signal samples into nn series of downstream optical signal samples.

It is respectfully submitted that Lee and Benhaddou do not show or suggest the combination recited in claim 6. Specifically, Lee does not refer to switching of downstream optical signals at all and also does not refer to an input to be switched of optical signal samples obtained by utilizing a spread spectrum technique. Additionally, it appears that the architecture of Lee is a one-way architecture at least because the TDM to WDM Hybrid Switching Module shown in Fig. 7 of Lee seems to be operable only in one direction because the coupler 55 is an nx1 coupler (Lee, col. 6, lines 14 - 17) and as such

the coupler 55 does not provide wavelength separation in inverse operation, which wavelength separation would have been necessary if downstream communication in a direction from Router II towards Router I would have been contemplated. Therefore, it appears that downstream communication and optical conversion of a broadband series of downstream optical signal samples obtained by utilizing a spread spectrum technique into nn series of downstream optical signal samples cannot be performed in the system of Lee.

Benhaddou also does not at all refer to switching of downstream optical signals and also does not refer to an input to be switched of optical signal samples obtained by utilizing a spread spectrum technique. Additionally, the architecture of Benhaddou also appears to be a one-way architecture at least because the multiplexer in the output port of Fig. 1b which deals with queuing and reassembly is operable only in one direction. Therefore, it appears that downstream communication and optical conversion of a broadband series of downstream optical signal samples obtained by utilizing a spread spectrum technique into nn series of downstream optical signal samples also cannot be performed in the system of Benhaddou.

Since neither Lee nor Benhaddou refer to switching of downstream optical signals and neither Lee nor Benhaddou enable performance of optical conversion of a broadband series of downstream optical signal samples obtained by utilizing a spread spectrum technique into nn series of downstream optical signal samples, it is respectfully submitted that combining Lee with Benhaddou necessarily cannot show or suggest switching of downstream optical signals, and necessarily cannot show or suggest the particular combination recited in claim 6.

Additionally, the arguments submitted above for claim 1 regarding inoperability of a combination of Lee with Benhaddou, a lack of motivation to combine Lee with Benhaddou, and a lack of suggestion to combine Lee with Benhaddou also apply to claim 6.

Combining Lee with Benhaddou is therefore inappropriate for rejecting claim 6.

Thus, Applicants respectfully point out that the Examiner has failed to make a *prima facie* case for the unpatentability of claim 6.

Claim 6 is therefore deemed allowable.

Claims 7 and 8 depend from claim 6 and recite additional patentable subject matter.

Also as regards claims 7 and 8, it is respectfully submitted that Lee and Benhaddou do not show or suggest at least the features of claims 7 and 8 which relate to separating the broadband series of downstream optical signal samples into nn series of downstream optical signal samples.

Claims 7 and 8 are therefore deemed allowable.

Claim 9 is apparatus claim corresponding to claim 1. The arguments submitted above with respect to the patentability of claim 1 also apply to claim 9.

Claim 9 is therefore deemed allowable.

Claim 10 depends from claim 9 and recites additional patentable subject matter.

Also as regards claim 10, it is respectfully submitted that Lee and Benhaddou do not show or suggest at least the features of claim 10 which relate to the grouped add-drop multiplexer (GADM) which is operative to drop the upstream optical signal samples obtained from the first source.

Claim 10 is therefore deemed allowable.

Claim 11 depends from claim 9 and recites additional patentable subject matter.

Also as regards claim 11, it is respectfully submitted that Lee and Benhaddou do not show or suggest at least the features of claim 11 which relate to the random add-drop multiplexer (RADM) which is operative to drop the upstream optical signal samples obtained from the first source.

Claim 11 is therefore deemed allowable.

Claim 12 is apparatus claim corresponding to claim 6. The arguments submitted above with respect to the patentability of claim 6 also apply to claim 12.

Claim 12 is therefore deemed allowable.

Claims 13 and 14 depend from claim 12 and recite additional patentable subject matter.

Claims 13 and 14 are therefore deemed allowable.

The arguments submitted above with respect to the patentability of claim 1 also apply to claim 15.

Claim 15 is therefore deemed allowable.

Claim 16 depends from claim 9 and recites additional patentable subject matter.

Claim 16 is therefore deemed allowable.

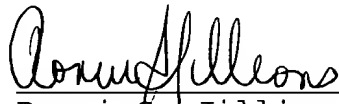
Claim 17 depends from claim 12 and recites additional patentable subject matter.

Claim 17 is therefore deemed allowable.

In view of the foregoing remarks, it is respectfully submitted that the present application is now in condition for allowance. Favorable reconsideration and allowance of the present application are respectfully requested.

Respectfully submitted,

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APPEARANCE
OF WORDS
CHANGED

LINK TO
ELEMENT 55
ADDED

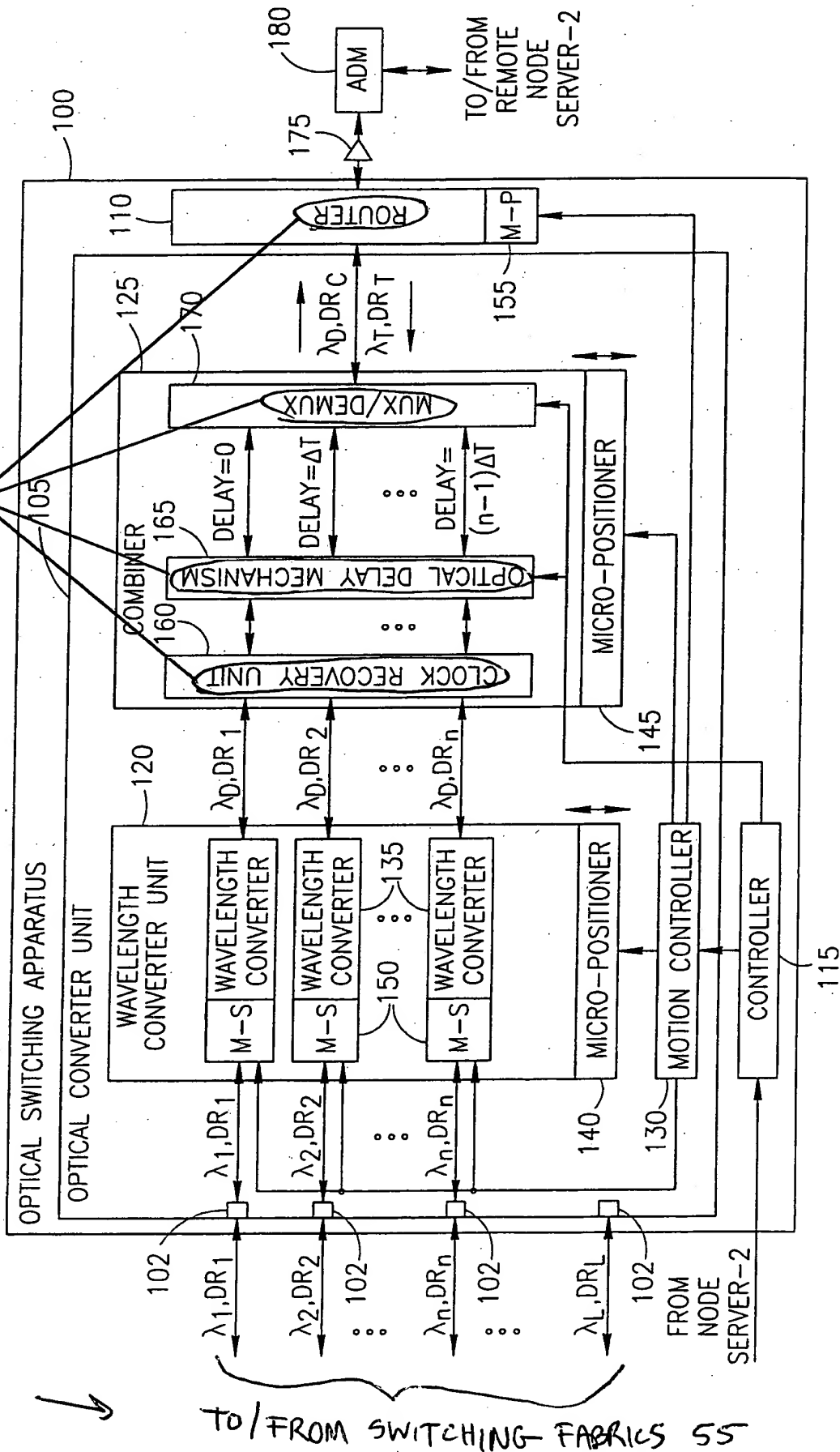


FIG.2

TO/FROM SWITCHING-FABRICS 55



APPEARANCE
OF WORDS
CHANGED

LINK TO
ELEMENT 55
ADDED

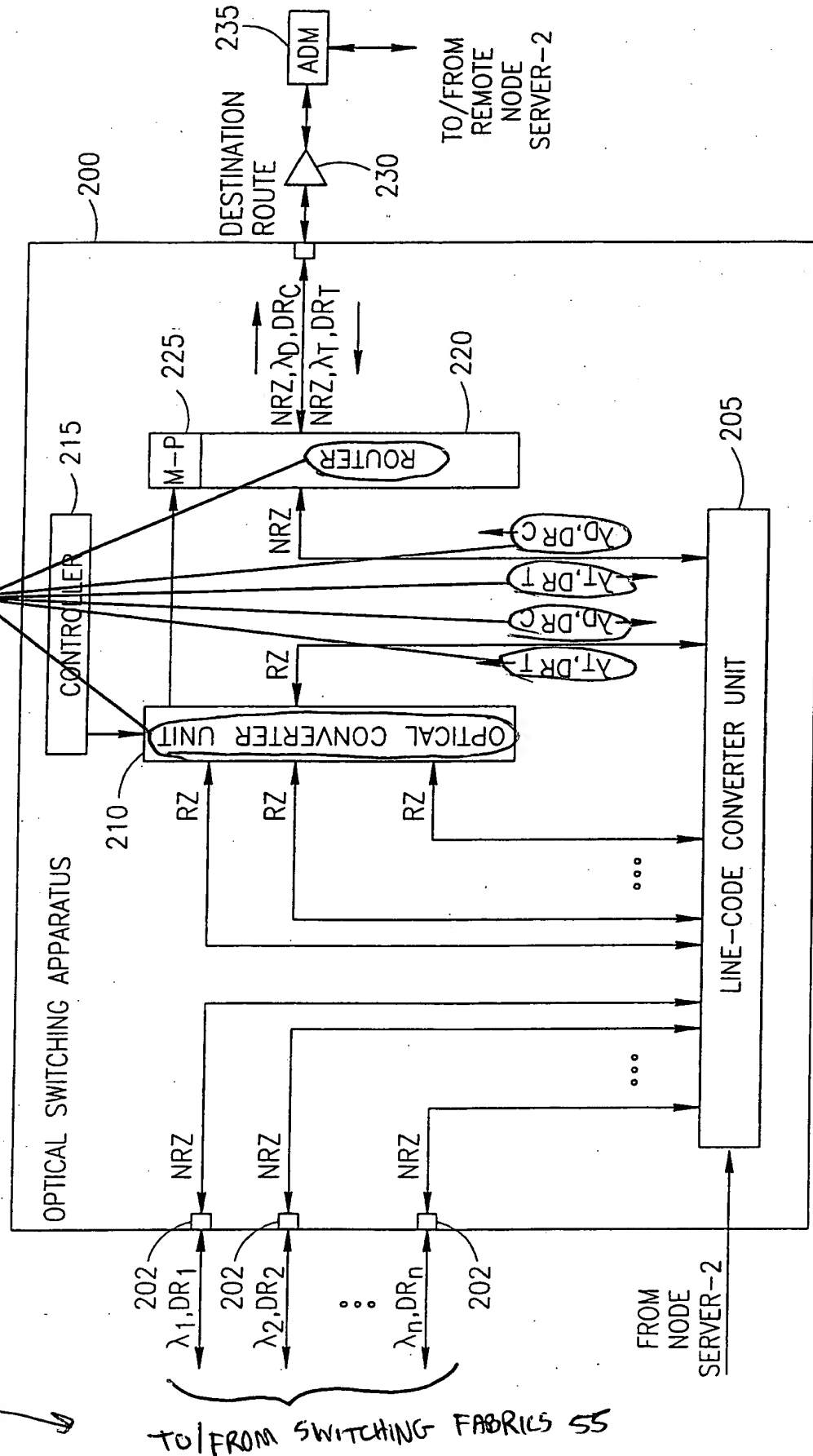


FIG.3

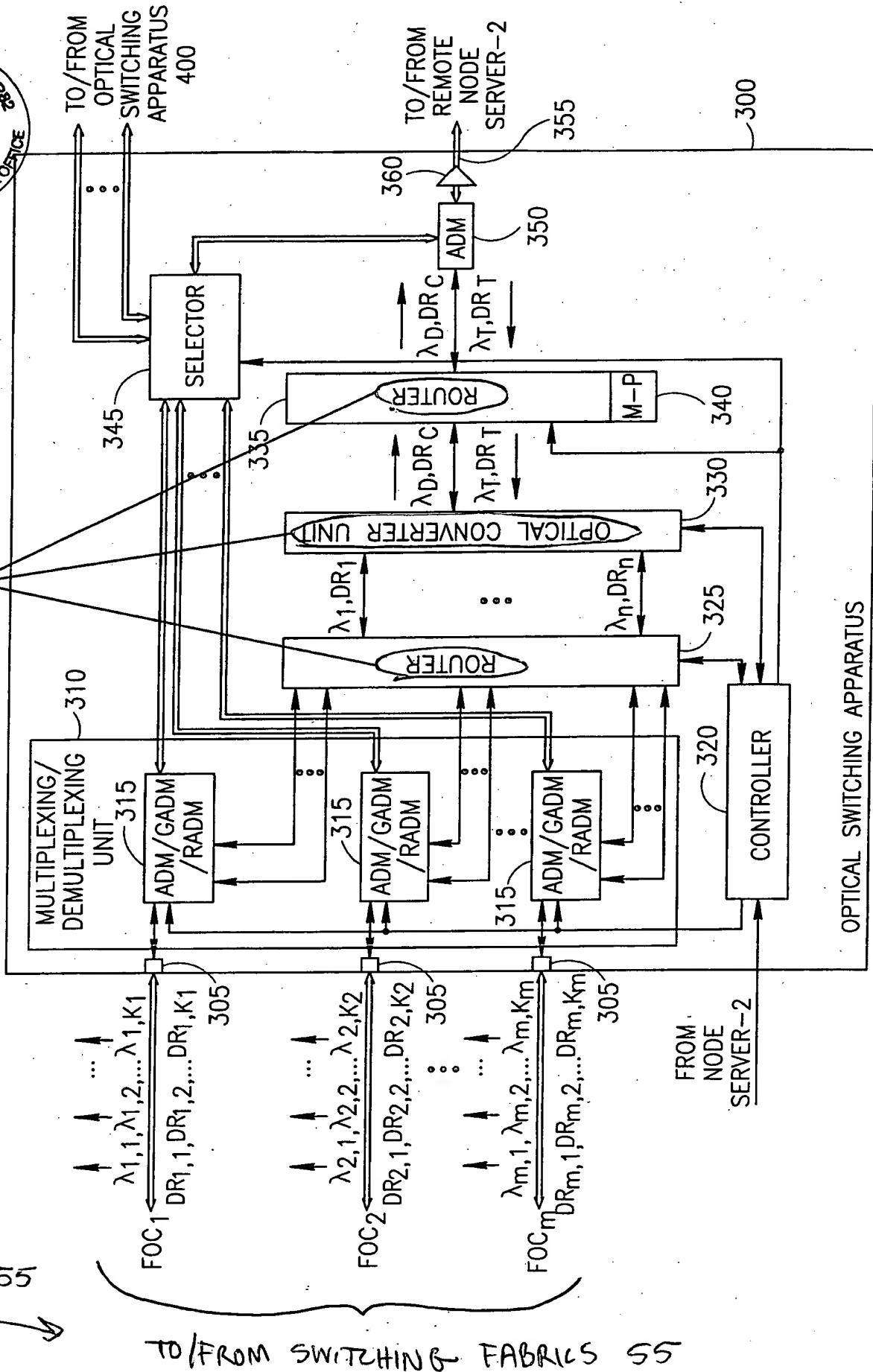
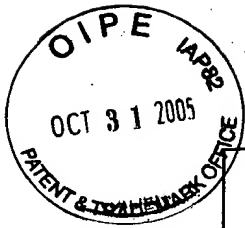


FIG.4